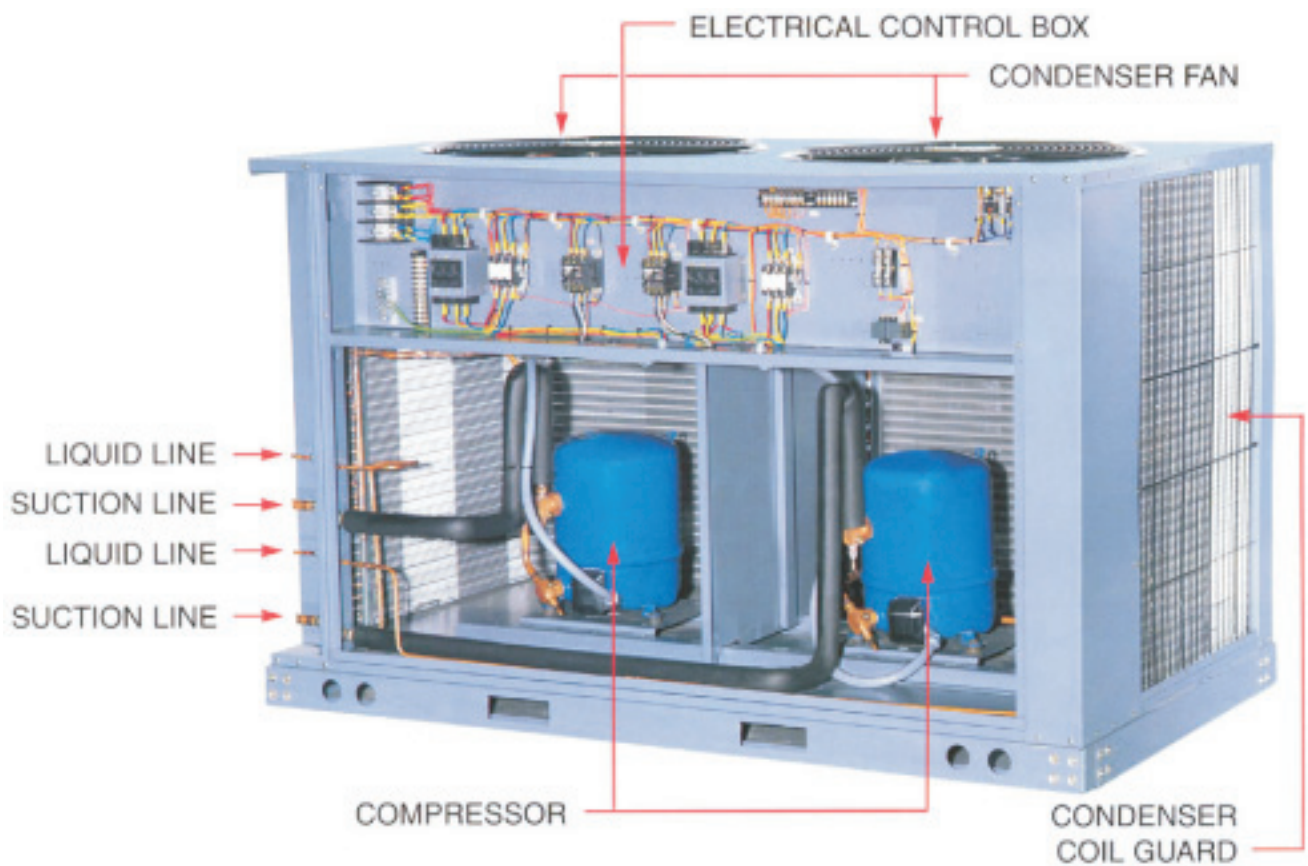


CTI Member



COMPONENTS'



MODELS: OCU150 thru OCU220



MODELS: OCU240 thru OCU360



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CONTINUING RESEARCH RESULTS IN STEADY IMPROVEMENTS.
THEREFORE, THESE SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

MODEL DECODING

1,2&3 BASIC	4,5&6 NOMINAL COOLING CAPACITY (MBH)	7 ELECTRICAL SUPPLY (V-Ph-Hz)	8 REFRIGERA- TIONCIRCUIT	9 COMPRESSOR TYPE	10 MODE	11 CONDENSER MOTOR	12 CONDENSER COIL	13 PDS OPTION	14 OTHER OPTIONS
OCU CONDENSING UNIT	150	H : 208/230-3-60	S : SINGLE	S : SCROLL	C : COOL ONLY	N : STANDARD	A : ALUMINUM FIN	N : NO OPTION	N : NO OPTION
	180	M : 380-3-60	D : DUAL	R : HERMETIC RECIPRO- CATING		L : LOW AMBIENT	B : COATED ALUMINUM FIN	P : PDS	U : UVM
	220	(4 WIRE)							V : VOLT FREE CONTACTS**
	240	F : 460-3-60		H : SEMI HERMETIC RECIPRO- CATING			C : COPPER FIN		C : U & V
	300								
	360	L : 380/415-3-50 (4 WIRE)							

** Must be defined specifying its purpose.

UNIT FEATURES

A. GENERAL

The Omran Tahviah condensing units casing shall be fabricated from heavy gauge galvanized steel .The unit is completely factory assembled and consists of a refrigerant compressors, condenser coils, fans & control panel.

These condensing units can be combined with a wide variety of evaporator coils and blower packages to provide quiet and dependable comfort. These units can be installed on a roof or at ground level.

B. UNIT ENCLOSURE

All panels are of heavy gauge (G-90) galvanized steel sheet .Steel sheet panels are zinc coated and galvanized by the hot dip process.

C. COMPRESSOR

Scroll or reciprocating compressors are used making these air conditioning equipment truly superior. The major benefits of scroll compressors are:

1. **Low sound level:** Quieter operation because of no dynamic suction and discharge valves action.
2. **Low vibration and discharge pulses.**
3. **High energy efficiency:** Because of high volumetric efficiency it minimize pressure and heat transfer losses.
4. **High capacity:** Due to its high mass flow and high compression ratios.
5. **High durability:** With its robust design, few moving parts, low motor strains, large internal volume for liquid handling makes this compressor highly reliable.
6. **High charge limit:** Therefore, lower applied costs as no suction accumulator required, no need for pump down system and check valve in discharge line.

D. AIR COOLED CONDENSER

1. The large wrap-around condenser coil is of corrugated fin & tube type, constructed of seamless copper tubes with wall thickness of 0.014" (0.356mm), and mechanically bonded to aluminum fins. All copper tube return bends have 0.022" (0.56mm) wall thickness. **As an option, coated aluminum fins or corrugated copper fins may be provided.** Tube support sheets are of galvanized steel, formed to provide structural strength. Tubes are circuited to ensure minimum pressure drop and maximum heat transfer. Each coil is completely dehydrated, charged and sealed at the factory upon completion of pressure tests.
2. The fans are propeller type and direct-driven, upward discharge provided by the stamped fan grille.
3. Units are equipped with totally enclosed fan motors for greater reliability and dependable performance for many years.

E. SERVICE VALVES

Both suction and liquid service valves are steel, back seating type with sweat connections. Valves are externally located so refrigerant tube connections can be made quickly and easily. Each valve has a gauge pressure port for ease of checking refrigerant operating pressures.



UNIT FEATURES

F. HIGH PRESSURE SWITCH

Auto reset SPST switch activated by refrigerant pressure - locks out the compressor, if the refrigerant pressure rises above 450 PSIG. Also provides additional protection against compressor damage due to loss of outdoor airflow.

G. LOW PRESSURE SWITCH

Auto reset SPST switch activated by refrigerant pressure - locks out the compressor, if the refrigerant pressure falls below 25 PSIG. Also provides additional protection against evaporator freeze up due to loss of indoor airflow.

OPTIONS

A. LOW AMBIENT OPTION

Low ambient operation down to 40 °F using fan cycling switch.

B. PUMP DOWN SOLENOID VALVE

Pump down solenoid valve keeps the evaporator coil dry of liquid refrigerant.

PHYSICAL DATA - 60Hz & 50Hz

MODELNUMBER		OCU150	OCU150	OCU180	OCU1 80	OCU220	OCU220
NUMBER OF REFRIGERATION CIRCUIT		Single	Dual	Single	Single	Single	Single
NOMINAL CAPACITY (TONS)*		12	12	15	15	18	18
COMPRESSOR	Type	Hermetic	Hermetic	Hermetic	Scroll	Hermetic	Scroll
	Option/Standard	Option	Standard	Option	Standard	Option	Standard
	Quantity	1	2	1	1	1	1
	Oil per system (oz), 60Hz	140	62.4	128	140	128	140
	Oil per system (oz), 50Hz	140	62.4	128	140	140	140
	Refrigerant	R- 22					
	Charge per system (oz), 60Hz ⁺	313	160	239	245	250	250
	Charge per system (oz), 50Hz ⁺	296	161	242	232	261	251
CONDENSER FAN	Type	Propeller					
	Qty. - Diameter (inch)	1 - 30	1 - 30	1 - 30	1 - 30	1 - 30	1 - 30
	Nominal CFM (60Hz)	10000	10000	12500	12500	12500	12500
	Nominal CFM (50Hz)	10000	10000	12000	12000	12000	12000
	Motor HP - RPM(60Hz)	3/4 - 1100	3/4 - 1100	1 - 1140	1 - 1140	1.5 - 1140	1.5 - 1140
	Motor HP - RPM(50Hz)	3/4 - 950	3/4 - 950	1 - 950	1 - 950	1.5 - 950	1.5 - 950
CONDENSER COIL	Type	Corrugated fin & tube					
	Tube Dia.- Rows	3/8 - 2	3/8 - 2	3/8 - 2	3/8 - 2	3/8 - 2	3/8 - 2
	Total face area (Sq. ft.)	38	38	38	38	38	38
HIGH PRESSURE SWITCH	Open (PSIG)	450 ± 10	450 ± 10	450 ± 10	450 ± 10	450 ± 10	450 ± 10
	Close (PSIG)	360 ± 15	360 ± 15	360 ± 15	360 ± 15	360 ± 15	360 ± 15
LOW PRESSURE SWITCH	Open (PSIG)	25 ± 5	25 ± 5	25 ± 5	25 ± 5	25 ± 5	25 ± 5
	Close (PSIG)	50 ± 5	50 ± 5	50 ± 5	50 ± 5	50 ± 5	50 ± 5
REFRIGERANT LINES**	Suction line size (OD), inch	1-3/8	7/8	1-3/8	1-3/8	1-3/8	1-3/8
	Liquid line size (OD), inch	5/8	1/2	5/8	5/8	5/8	5/8
SHIPPING WEIGHT	Kg.	400	415	550	565	600	620

* Refer to performance data for exact rating values.

** Pipe sizes are for runs up to 50 feet to indoor unit. For refrigerant lines longer than 50 feet, use next larger size.

+ Operating system charge is applicable when matched with air handling units & connected by 25 feet of refrigerant piping.

PHYSICAL DATA - 60Hz & 50Hz

MODELNUMBER		OCU240	OCU240	OCU300	OCU300	OCU360	OCU360
NUMBER OF REFRIGERATION CIRCUIT		Single	Single	Single	Single	Single	Single
NOMINAL CAPACITY (TONS)*		20	20	25	25	30	30
COMPRESSOR	Type	Semi hermetic	Scroll	Semi hermetic	Scroll	Semi hermetic	Scroll
	Option/Standard	Option	Standard	Option	Standard	Option	Standard
	Quantity	1	1	1	1	1	1
	Oil per system (oz), 60Hz	106	110	106	135	106	223
	Oil per system (oz), 50Hz	106	135	106	223	106	223
	Refrigerant	R- 22					
	Charge per system (oz), 60Hz ⁺	360	360	450	450	540	540
	Charge per system (oz), 50Hz ⁺	360	360	450	450	540	540
CONDENSER FAN	Type	Propeller					
	Qty. - Diameter (inch)	2 - 30	2 - 30	2 - 30	2 - 30	3 - 30	3 - 30
	Nominal CFM (60Hz)	15200	15200	15200	15200	22800	22800
	Nominal CFM (50Hz)	13200	13200	13200	13200	19800	19800
	Motor HP - RPM(60Hz)	1.5 - 1100	1.5 - 1100	1.5 - 1100	1.5 - 1100	1.5 - 1100	1.5 - 1100
	Motor HP - RPM(50Hz)	1.5 - 950	1.5 - 950	1.5 - 950	1.5 - 950	1.5 - 950	1.5 - 950
CONDENSER COIL	Type	Corrugated fin & tube					
	Tube Dia.- Rows	3/8 - 4	3/8 - 4	3/8 - 5	3/8 - 5	3/8 - 4	3/8 - 4
	Total face area (Sq. ft.)	28	28	28	28	46.66	46.66
HIGH PRESSURE SWITCH	Open (PSIG)	450 ± 10	450 ± 10	450 ± 10	450 ± 10	450 ± 10	450 ± 10
	Close (PSIG)	360 ± 15	360 ± 15	360 ± 15	360 ± 15	360 ± 15	360 ± 15
LOW PRESSURE SWITCH	Open (PSIG)	25 ± 5	25 ± 5	25 ± 5	25 ± 5	25 ± 5	25 ± 5
	Close (PSIG)	50 ± 5	50 ± 5	50 ± 5	50 ± 5	50 ± 5	50 ± 5
REFRIGERANT LINES**	Suction line size (OD), inch	1-3/8	1-3/8	1-3/8	1-3/8	1-5/8	1-5/8
	Liquid line size (OD), inch	5/8	5/8	5/8	5/8	7/8	7/8
SHIPPING WEIGHT	Kg.	860	860	900	900	1050	1050

* Refer to performance data for exact rating values.

** Pipe sizes are for runs up to 50 feet to indoor unit. For refrigerant lines longer than 50 feet, use next larger size.

+ Operating system charge is applicable when matched with air handling units & connected by 25 feet of refrigerant piping.

SELECTION PROCEDURE

1. Enter performance tables at specified SST and desired ambient conditions.
2. HEAT REJECTION:
Calculate condenser Total Heat Rejection Capacity as follows:
 $HR = \text{Unit cooling capacity} + (3.41 \times \text{Total Unit Power Input, Watts}).$
3. HEAD PRESSURE:
To determine head pressure (psig) use the following conversion table:

Condensing Temp. - °F.	100	110	120	130	140	150	160
(R-22) Head Pressure - PSIG.	195.9	226.4	259.9	296.9	337.3	381.6	429.8

4. CORRECTION FACTORS FOR ALTITUDE:

ALTITUDE (FEET)		2000	4000	6000	8000	10000
FACTOR	Condensing Unit Cooling Capacity	.99	.98	.96	.95	.94
	Condensing Unit & Evaporator	.98	.96	.93	.90	.88

PERFORMANCE DATA - 60Hz

MODEL: OCU150 HERMETIC RECIPROCATING (SINGLE) COMP.

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	130.9	121.5	112.1	103.8	94.4	86.1
	CT	98	106	114	124	134.5	142.5
	kW	11.4	11.9	12.5	13.1	13.9	14.4
35	TC	145.5	136.1	125.7	115.8	105.9	95.5
	CT	101	110	117	127	137	145
	kW	11.8	12.5	13	13.8	14.5	15.2
40	TC	161.6	150.7	140.2	127.7	117.3	106.4
	CT	104	112	121	130	139.5	147
	kW	12.2	13	13.8	14.5	15.4	16.1
45	TC	176.7	165.2	152.7	141.3	127.7	116.3
	CT	106	114	124	132.5	141	148.5
	kW	12.7	13.5	14.5	15.3	16.1	16.9
50	TC	191.3	178.8	165.8	152.7	140.2	126.2
	CT	107	116	125	134	143	150
	kW	13	14	15	16	16.8	17.7
55	TC	205.9	192.3	177.7	163.2	150.7	136.6
	CT	109	118	127	135	143.5	151.5
	kW	13.5	14.6	15.7	16.7	17.7	18.6

MODEL: OCU150 HERMETIC RECIPROCATING (DUAL) COMP.

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	125.8	118.8	111.1	103.5	95.2	88.2
	CT	98	106	116	125	136	145
	kW	11.1	11.8	12.5	13.2	14.1	14.8
35	TC	140	131.7	123.5	114.1	105.8	97.6
	CT	101	108.5	117.5	127	137	146
	kW	11.6	12.3	13.1	13.9	14.7	15.5
40	TC	154.1	145.8	136.4	127	116.4	108.2
	CT	102.5	111	120	130	140	148
	kW	12.1	12.9	13.7	14.7	15.6	16.3
45	TC	169.4	160	149.4	138.8	128.2	118.8
	CT	104	113	122	131	141	149
	kW	12.5	13.5	14.4	15.3	16.2	17
50	TC	181.1	174.1	162.3	150.5	140	128.8
	CT	105.5	114	124	133	142	150
	kW	13.1	14	15	15.9	16.9	17.8
55	TC	198.8	188.2	175.2	163.5	150.5	138.8
	CT	107	115	124.5	134.5	143	151
	kW	13.7	14.7	15.7	16.8	17.7	18.5

MODEL : OCU180 (SCROLL COMPRESSOR)

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	160.8	151.8	143.1	135.5	127.6	119
	CT	99	107	117	127	136	146
	kW	12.4	12.7	13	13.4	13.8	14.1
35	TC	177	167.4	159.3	150.2	142	133
	CT	101	110	119	129	138	148
	kW	13.7	14.3	14.6	15	15.4	15.7
40	TC	193.6	183.8	173.2	164.6	154.8	145.7
	CT	103	112	121	131	140	150
	kW	15.5	15.7	16.1	16.4	16.8	17.2
45	TC	210.5	200.7	190.2	173.2	169.5	160.8
	CT	105	114	123	133	142	152
	kW	17.1	17.4	17.8	18.1	18.3	18.5
50	TC	230.1	218.1	206.4	195.5	185.3	172.5
	CT	107	116	125	134	143	153
	kW	18.6	19	19.3	19.5	19.7	20
55	TC	244.1	233.1	221.5	209.4	197.7	186
	CT	108	118	127	135	145	154
	kW	20.3	20.6	21	21.2	21.4	21.6

MODEL : OCU180 (HERMETIC RECIPROCATING COMP.)

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	176.4	161.9	149.6	136.7	120.6	106.7
	CT	102	110	118	124	135	143
	kW	16.5	16.6	16.9	17.1	17.5	18
35	TC	198.9	182.9	168.4	152.8	138.3	123.3
	CT	105	113	122	130	139	147
	kW	17	17.3	17.8	18.3	18.7	19.2
40	TC	220.9	204.3	187.7	171.1	155.9	139.4
	CT	108	116	124	132	141	151
	kW	17.6	18.3	18.8	19.4	20	20.7
45	TC	244	226.8	207	188.8	173.9	156
	CT	111	119	127	135	144	153
	kW	18.4	19.2	19.8	20.4	21.3	22.1
50	TC	267	247.7	229.5	228.6	189.8	173.9
	CT	113	121	129	137	146	155
	kW	19.3	20	20.8	21.6	22.5	23.6
55	TC	286.9	267	244	227.9	205.4	188.2
	CT	115	123	131	139	148	157
	kW	20.1	20.8	21.8	22.8	24.1	25.3

LEGEND:

SST - Saturated Suction Temperature; TC - Total Capacity (1000 Btu/h) Gross; CT - Condensing Temperature (°F); kW - Total unit power input

PERFORMANCE DATA - 60Hz

MODEL : OCU220 (SCROLL COMPRESSOR)

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	190	181.6	171.6	160.8	150	140
	CT	100	110	120	130	140	150
	kW	14.5	16.5	18.6	20.7	22.8	24.8
35	TC	207.5	197.5	187.5	176	165	155
	CT	103	114	123	132	142.5	151
	kW	15.2	17.4	19.2	21.2	23.2	25
40	TC	227	216	205	192.5	181.5	170
	CT	107	116	125.5	135.5	143.5	153
	kW	16	17.8	19.7	21.9	23.6	25.5
45	TC	245	232.5	222.5	210	197.5	185
	CT	110	119.5	127.5	137.5	145	155
	kW	16.6	18.6	20.3	22.5	24	26
50	TC	265	251	240	225	213	200
	CT	112	122	130	140	147	156.5
	kW	16.9	19.1	20.8	23	24.4	26.3
55	TC	282.5	270	257	242	230	215
	CT	115	124	131	141.5	148	158
	kW	17.4	19.6	21	23.3	25.1	26.6

MODEL : OCU220(HERMETIC RECIPROCATING COM P.)

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	194	179.1	164.8	151	136.7	121.3
	CT	103.5	112	121	129	138	146
	kW	18.2	18.7	19.2	19.7	20.2	20.8
35	TC	217.1	200.7	185.7	169.7	153.7	137.8
	CT	108	116	124.5	133	141	150
	kW	19	19.6	20.1	20.8	21.5	22.2
40	TC	239.7	223	206.1	189	171.9	154.8
	CT	111	119.5	128	136	144.5	152.5
	kW	20	20.6	21.2	22.1	23	23.5
45	TC	262.2	244.6	226.4	208.5	190.1	170.8
	CT	114	122.5	130	138	147	155
	kW	20.9	21.8	22.6	23.1	24.2	25.1
50	TC	285.9	266.1	249	226.6	206.6	187.9
	CT	116	125	133	141	149	157
	kW	21.8	22.9	23.7	24.9	25.7	26.7
55	TC	308	286.5	266.1	244.6	223.4	203.3
	CT	118	127	135	143	150	158
	kW	23	24	25	26.2	27.1	28.4

MODEL : OCU240 (SCROLL COMPRESSOR)

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	224	212.8	201	191	180	166
	CT	100	109	118	128	138	148
	kW	17.8	19.53	21.6	23.2	25.8	27.6
35	TC	245.9	233.94	221.4	210.3	198.35	184.2
	CT	102	111	120	130	140	150
	kW	18.2	19.81	22	24	26.1	28
40	TC	267.8	255.08	241.8	229.6	216.7	202.4
	CT	104	113	123	132	142	152
	kW	18.6	20.27	22.6	24.35	26.5	28.4
45	TC	289.7	276.22	262.2	248.9	235.05	220.6
	CT	106	115	125	133	143	153
	kW	19	20.62	23	24.6	26.7	28.8
50	TC	311.6	297.36	282.6	268.2	253.4	238.8
	CT	107.5	117	127	135	145	154
	kW	19.35	21.5	23.5	25	27.1	29
55	TC	333.5	318.5	303	287.5	271.75	257
	CT	109	119	129	138	147	155
	kW	19.58	21.8	24	25.7	27.4	29.1

MODEL: OCU240 (SEMI HERMETIC COMPRESSOR)

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	207.6	195	182.5	170	157.5	144.7
	CT	98	106	115	124	134	143
	kW	18	19	20.5	21.7	23.2	24.5
35	TC	231.28	217.5	203.8	190.1	176.4	162.46
	CT	100	108	117	126.5	136	144.5
	kW	18.2	19.5	21.2	22.7	24.3	25.7
40	TC	254.96	240	225.1	210.2	195.3	180.22
	CT	102.5	111	120	129.5	139	147.5
	kW	18.7	20.5	22.2	24	25.7	27.5
45	TC	278.64	262.5	246.4	230.3	214.2	197.98
	CT	104	112.5	122	131	140.5	150
	kW	19	21	23.1	25.1	27.2	29.1
50	TC	302.32	285	267.7	250.4	233.1	215.74
	CT	105	114	123.5	133	142	151
	kW	19.5	21.8	24.1	26.5	28.5	30.6
55	TC	326	307.5	289	270.5	252	233.5
	CT	107.5	116	125	134.5	143	153
	kW	20.2	22.8	25.1	27.6	30.2	32.7

MODEL : OCU300 (SCROLL COMPRESSOR)

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	282	268	254	240	226	212
	CT	100	112	122	133	144	154
	kW	23.2	26.1	28.5	31.2	33.9	36.4
35	TC	309.6	294.66	279.68	264.72	249.76	234.8
	CT	103	114	124	136	146	156
	kW	24	26.8	29.2	32.1	34.6	37
40	TC	337.2	321.32	305.36	289.44	273.52	257.6
	CT	106	116	126	138	148	158
	kW	24.8	27.4	29.8	32.8	35.2	37.5
45	TC	364.8	347.98	331.04	314.16	297.28	280.4
	CT	108	118	129	140	150	160
	kW	25.3	28	30.6	33.3	35.7	38.2
50	TC	392.4	374.64	356.72	338.88	321.04	303.2
	CT	110	120	131	142	152	162
	kW	26.1	28.5	31.4	33.7	36.2	38.7
55	TC	420	401.3	382.4	363.6	344.8	326
	CT	112	122	133	143	154	164
	kW	26.8	29.2	32	34.2	37	39.3

MODEL: OCU300 (SEMI HERMETIC COMPRESSOR)

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	282.2	265.6	250.2	233.4	216.6	199.8
	CT	104	112	121	130	140	150
	kW	27.3	29	30.3	32	34.4	36.5
35	TC	313.12	294.74	277.48	259.1	240.72	222.34
	CT	107	115	124	133	142	152.5
	kW	28	29.9	31.4	33.6	36.2	38.3
40	TC	343.84	323.88	304.76	284.8	264.84	244.88
	CT	109	118	126.5	136	145	155
	kW	28.7	30.8	33.2	35.8	37.1	40.5
45	TC	374.56	353.02	332.04	310.5	288.96	267.42
	CT	111	120	130	139	148	157
	kW	29.9	31.7	35.2	37.4	40.4	42.8
50	TC	405.28	382.16	359.32	336.2	313.08	289.96
	CT	113	122.5	132	141	150	158.5
	kW	30.8	33.6	36.8	39.5	42.5	45.5
55	TC	436	411.3	386.6	361.9	337.2	312.5
	CT	115	124	133	142.5	151.5	160
	kW	32	35.2	38.6	41.6	45.2	48.2

LEGEND:

SST - Saturated Suction Temperature; TC - Total Capacity (1000 Btuh) Gross; CT - Condensing Temperature (°F); kW - Total unit power input

PERFORMANCE DATA - 60Hz

MODEL : OCU360 (SCROLL COMPRESSOR)

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	334	317	300	284.5	267.5	250
	CT	98	108	117	126	136	146
	kW	26.8	30.2	33	36.2	39.5	42.9
35	TC	369.2	350.8	332.4	315.2	296.6	277.8
	CT	101	110	119	128	138	148
	kW	27.5	30.8	33.8	37	40.5	43.9
40	TC	404.4	384.6	364.8	345.9	325.7	305.6
	CT	103	112	121	130	140	150
	kW	28.7	31.5	34.7	37.7	41.2	44.5
45	TC	439.6	418.4	397.2	376.6	354.8	333.4
	CT	105	113	123	133	142	152
	kW	29.3	32	35.3	38.7	41.8	45.2
50	TC	474.8	452.2	429.6	407.3	383.9	361.2
	CT	106	115	125	134	144	153
	kW	29.7	32.7	36	39.2	42.6	45.7
55	TC	510	486	462	438	413	389
	CT	107	116	126	135	145	154
	kW	30.3	33.3	36.7	39.7	43.2	46.3

MODEL: OCU360 (SEMI HERMETIC COMPRESSOR)

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	349.89	328.65	310	291.18	272.6	251
	CT	100	109.5	119	128	137	146
	kW	31.9	34.2	36.6	38.7	40.9	43.3
	TC	388.47	365.23	344.29	322.86	302.1	278.33
35	CT	101.5	111	120.5	130	139.5	148.5
	kW	32.6	35.2	37.9	40.2	43	45.2
	TC	427.06	401.81	378.58	354.55	331.6	305.66
40	CT	104	114	123	133	142	151
	kW	33.2	36.4	39	42.5	45	48
	TC	465.64	438.39	412.87	386.23	361.1	332.99
45	CT	106	116	125	134	143.5	152.5
	kW	34.2	37.6	40.8	44.2	47.2	50.3
	TC	504.23	474.97	447.16	417.92	390.6	360.32
50	CT	109	118	127	136	145	154.5
	kW	35.5	38.8	42.4	45.8	49.2	52.6
	TC	542.81	511.55	481.45	449.6	420.1	387.65
55	CT	110	119.5	128.5	137.5	146	155.5
	kW	36.7	40.4	44.2	47.6	51.5	54.9

PERFORMANCE DATA - 50Hz

MODEL: OCU150 HERMETIC RECIPROCATING (SINGLE) COMP.

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	122	115	107	100	90	83
	CT	95	104	113	122	132	141
	kW	10.3	10.9	11.5	12.2	12.7	13.4
35	TC	136	128	119	110	100	92
	CT	100	108	117	125	135	144
	kW	10.9	11.4	12.1	12.7	13.4	14.1
40	TC	150	141	130	122	110	101
	CT	102	110	119.5	127	138	146
	kW	11.3	11.9	12.8	13.3	14.2	14.9
45	TC	165	154	144	132	120	110
	CT	104	113	121	130	140	147
	kW	11.7	12.6	13.2	14	14.9	15.7
50	TC	180	167	156	144	125	118
	CT	106	114	122	131	142	148
	kW	12.1	13	13.7	14.7	15.7	16.2
55	TC	196	180	168	154	140	128
	CT	108	115	124	132	143	148.5
	kW	12.6	13.3	14.3	15.2	16.4	16.9

MODEL: OCU150 HERMETIC RECIPROCATING (DUAL) COMP.

SST (°F)		AMBIENT TEMPERATURE - °F					
		75	85	95	105	115	125
30	TC	120	114	107.5	100	92.5	86
	CT	95	104	114	123	134	142
	kW	10.6	11.4	12.2	13	13.9	14.5
35	TC	134	126	119	110	102	94
	CT	98	109	118	127	136	144.5
	kW	11.3	12.1	13	13.8	14.5	15.3
40	TC	144	140	131	122	113	105
	CT	100	110	120	129	138	147
	kW	11.8	12.7	13.6	14.5	15.3	16.1
45	TC	162	153	143	136	124	114
	CT	102	112	122	131	140	149
	kW	12.4	13.2	14.1	15.2	16	16.9
50	TC	176	166	155	145	134	124
	CT	104	114	124	132	141	150
	kW	12.9	13.9	15	15.9	16.8	17.7
55	TC	191.5	180	168	156	145	134
	CT	105	115	125	134	142	151
	kW	13.3	14.5	15.6	16.5	17.4	18.6

MODEL: OCU180 (SCROLL COMPRESSOR)

SST (°F)		AMBIENT TEMPERATURE - °F					
		75	85	95	105	115	125
30	TC	159	151	147	134	127	119
	CT	98	107	117	128	136	145
	kW	12.4	13.7	15.4	17.2	18.6	20
35	TC	175	171	157	148	141	131
	CT	100	109	119	130	138	147
	kW	12.6	14.1	15.7	17.5	18.9	20.5
40	TC	192	182	172	168	155	145
	CT	101	110	122	132	140	148
	kW	12.8	14.3	16.3	17.9	19.3	20.6
45	TC	208	197	187	177	168	159
	CT	102	113	125	134	142	149
	kW	13	14.8	16.8	18.3	19.6	20.7
50	TC	224	213	202	192	182	173
	CT	103	114	127	136	144	150
	kW	13	15	17.1	18.6	19.9	20.9
55	TC	240	229	218	207	196	187
	CT	103	116	128	137	145	151
	kW	13.3	15.3	17.3	18.8	20.1	21.1

MODEL: OCU180 (HERMETIC RECIPROCATING COMP.)

SST (°F)		AMBIENT TEMPERATURE - °F					
		75	85	95	105	115	125
30	TC	161	150	137	124	111	99
	CT	98	106	117	126	135	143
	kW	13.8	14.2	14.6	14.9	15.3	15.6
35	TC	180	167	153	140	126	113
	CT	102	111	120	128	137	146
	kW	14.6	15	15.5	15.8	16.2	16.8
40	TC	199	185	171	156	142	127
	CT	105	113	123	132	139	148
	kW	15.2	15.7	16.4	16.9	17.4	18
45	TC	218	203	187	172	157	141
	CT	108	117	126	133	142	151
	kW	16.1	16.7	17.4	17.9	18.6	19.3
50	TC	238	221	205	188	172	156
	CT	110	119	127	135	143	152
	kW	16.8	17.5	18.3	19	19.7	20.5
55	TC	257	238	222	205	188	171
	CT	112	121	129	136	145	154
	kW	17.6	18.5	19.3	19.9	20.9	21.7

LEGEND:

SST - Saturated Suction Temperature: TC - Total Capacity (1000 Btuh) Gross: CT - Condensing Temperature (°F): kW - Total unit power input

PERFORMANCE DATA - 50Hz

MODEL: OCU360 (SCROLL COMPRESSOR)

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	290.2	276.5	260.1	245	230.2	215
	CT	98	108	117	126	136	145
	kW	26.8	29	31.2	33.3	35.64	37.8
35	TC	321.93	306.98	288.94	272.88	256.12	240
	CT	100	110	119	128	138	147
	kW	27.25	29.5	31.8	34	36.2	38.47
40	TC	353.66	337.46	317.79	300.77	282.05	265
	CT	102	111.7	121	130	140	149
	kW	27.76	29.9	32.2	34.4	36.8	38.9
45	TC	385.39	367.94	346.63	328.65	307.97	290
	CT	104	113.4	122.5	131.6	141	151
	kW	28.2	30.53	32.8	35	37.2	39.2
50	TC	417.12	398.42	375.48	356.54	333.9	315
	CT	105	114.6	124	133.5	142.5	152.5
	kW	28.4	30.9	33.2	35.4	37.4	39.5
55	TC	448.85	428.9	404.32	384.42	359.82	340
	CT	106.6	116.4	125.7	135	144	154
	kW	28.8	31.2	33.6	35.8	37.9	40.5

MODEL: OCU360 (SEMI HERMETIC COMPRESSOR)

SST (°F)		AMBIENTTEMPERA TURE - °F					
		75	85	95	105	115	125
30	TC	328.34	311.6	290	273.8	258.14	241.4
	CT	100	110	120	128.5	138	147
	kW	27	29.3	31.7	33.5	35.8	37.5
35	TC	363.87	344.54	322	303.5	285.25	266.35
	CT	104	112.5	122	131.5	140	149
	kW	29.3	30.62	33	35.8	37.4	39.5
40	TC	399.4	377.48	354	333.2	312.36	291.3
	CT	106	115	125	133.5	142.8	151.5
	kW	29.9	32.25	34.7	36.75	39.2	41.2
45	TC	434.93	410.42	386	362.9	339.47	316.25
	CT	109	117.5	127	135.5	145	154
	kW	31.2	33.7	36.4	38.5	41.4	42.5
50	TC	470.46	443.36	418	392.6	366.58	341.2
	CT	111	120	128.5	137.5	146.2	155.5
	kW	32.8	35.2	38	40.2	43.2	45.2
55	TC	506	476.3	450	422.3	393.69	366.15
	CT	112.5	122	130	140	148	157
	kW	33.7	37.2	39.6	42.7	45.1	47.2

LEGEND:

SST - Saturated Suction Temperature

TC - Total Capacity (1000 Btuh) Gross

CT - Condensing Temperature (°F)

kW - Total unit power input

ELECTRICAL DATA

(Hermetic reciprocating compressor units)

MODEL No.: OCU150 (Single compressor)

POWER SUPPLY (V-Ph-Hz)	VOLTAGE RANGE		COMPRESSOR		* FAN MOTOR FLA (each)	MCA	MFS
	MIN.	MAX.	RLA	LRA			
208 230-3-60	187	253	45.7	259	2.5	62.1	100
380-3-60 (4 W)	342	418	26	143	2.5	37.5	60
460-3-60	414	506	21.4	115	1.3	29.4	50
380 415-3-50 (4 W)	342	457	25.7	130	2.5	37.1	60

MODEL N o.: OCU150 (Dual compressor)

POWER SUPPLY (V-Ph-Hz)	VOLTAGE RANGE		COMPRESSOR (each)		* FAN MOTOR FLA (each)	MCA	MFS
	MIN.	MAX.	RLA	LRA			
208 230-3-60	187	253	22	128	2.5	54.5	70
380-3-60 (4 W)	342	418	13	57	2.5	34.3	45
460-3-60	414	506	11	71	1.3	27.4	35
380 415-3-50 (4 W)	342	457	16.4	69	2.5	41.9	50

MODEL No.: OCU180(Dual Optional)

POWER SUPPLY (V-Ph-Hz)	VOLTAGE RANGE		COMPRESSOR (each)		FAN MOTOR FLA (each)	MCA	MFS
	MIN.	MAX.	RLA	LRA			
208 230-3-60	187	253	30.1	183	3.7	75.1	100
380-3-60 (4 W)	342	418	15.8	91.1	1.7	39.1	50
460-3-60	414	506	15.8	91.1	1.8	39.2	50
380 415-3-50 (4 W)	342	457	19.3	96.5	1.9	47.2	60

MODEL N o.: OCU220(Dual Optional)

POWER SUPPLY (V-Ph-Hz)	VOLTAGE RANGE		COMPRESSOR (each)		FAN MOTOR FLA (each)	MCA	MFS
	MIN.	MAX.	RLA	LRA			
208 230-3-60	187	253	38.5	193	3.7	94	125
380-3-60 (4 W)	342	418	19.3	96.5	1.7	46.8	60
460-3-60	414	506	19.3	96.5	1.8	47	60
380 415-3-50 (4 W)	342	457	19.5	105	1.9	47.7	60

Scroll compressor units

MODEL No.: OCU180(Dual Optional)

POWER SUPPLY (V-Ph-Hz)	VOLTAGE RANGE		COMPRESSOR (each)		FAN MOTOR FLA (each)	MCA	MFS
	MIN.	MAX.	RLA	LRA			
208 230-3-60	187	253	27.6	189	3.7	69.5	90
380-3-60 (4 W)	342	418	17.5	112	1.7	42.8	60
460-3-60	414	506	14.6	94	1.8	36.5	50
380 415-3-50 (4 W)	342	457	17.9	123	1.9	44.1	60

MODEL N o.: OCU220(Dual Optional)

POWER SUPPLY (V-Ph-Hz)	VOLTAGE RANGE		COMPRESSOR (each)		FAN MOTOR FLA (each)	MCA	MFS
	MIN.	MAX.	RLA	LRA			
208 230-3-60	187	253	35	232	3.7	86.2	110
380-3-60 (4 W)	342	418	21.8	144	1.7	52.5	70
460-3-60	414	506	17.9	125	1.8	43.9	60
380 415-3-50 (4 W)	342	457	19.2	127	1.9	47	60

MODEL No.: OCU240(Dual Optional)

POWER SUPPLY (V-Ph-Hz)	VOLTAGE RANGE		COMPRESSOR (each)		FAN MOTOR FLA (each)	MCA	MFS
	MIN.	MAX.	RLA	LRA			
208 230-3-60	187	253	35.7	237	5	90.3	125
380-3-60 (4 W)	342	418	21.4	160	2.7	53.6	70
460-3-60	414	506	20.7	130	2.5	51.6	70
380 415-3-50 (4 W)	342	457	25	175	2.9	62.1	80

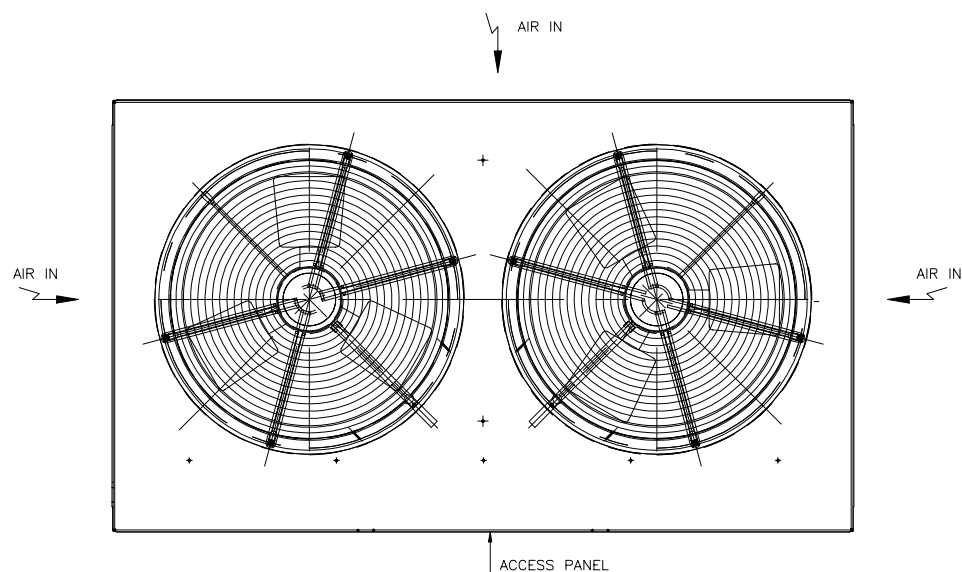
MODEL N o.: OCU300(Dual Optional)

POWER SUPPLY (V-Ph-Hz)	VOLTAGE RANGE		COMPRESSOR (each)		FAN MOTOR FLA (each)	MCA	MFS
	MIN.	MAX.	RLA	LRA			
208 230-3-60	187	253	53.5	380	5	130.4	175
380-3-60 (4 W)	342	418	30	235	2.7	72.9	100
460-3-60	414	506	25	175	2.5	61.3	80
380 415-3-50 (4 W)	342	457	25	175	2.9	62.1	80

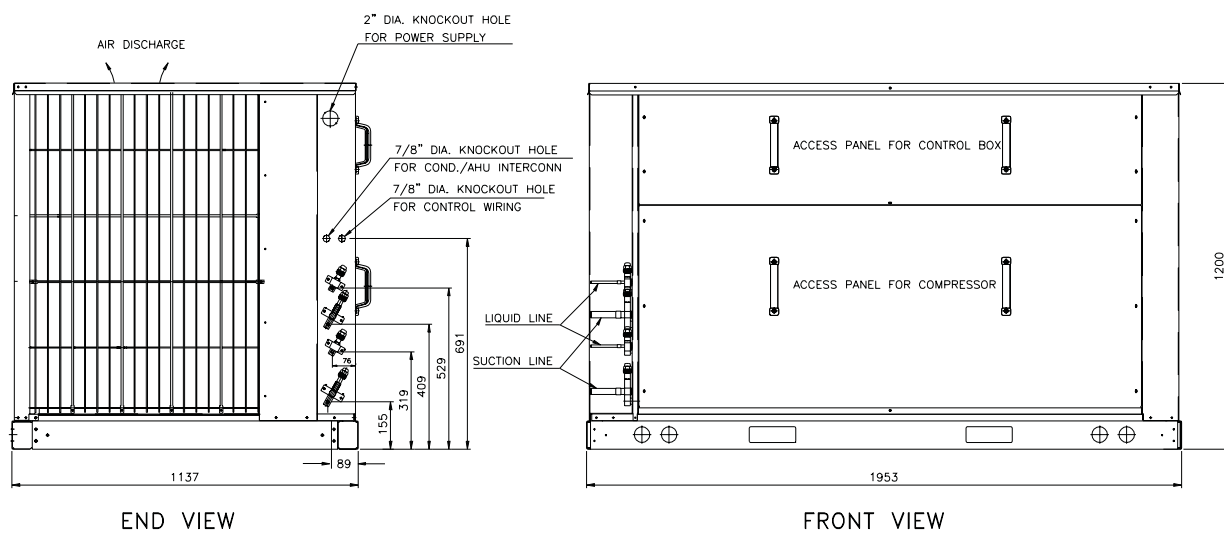
Note: Refer to next page for legend.

DIMENSIONS

OCU150 - OCU220



TOP VIEW

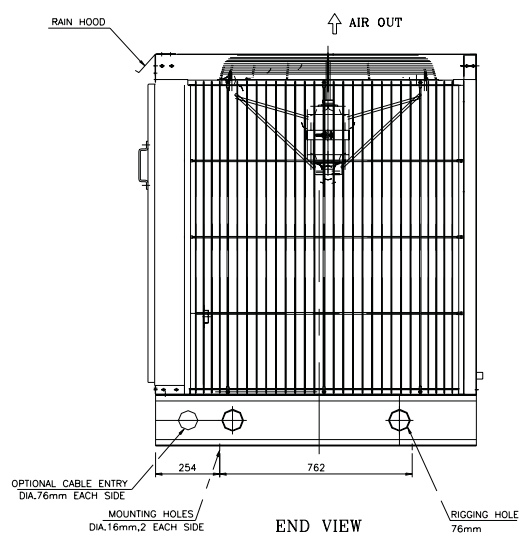
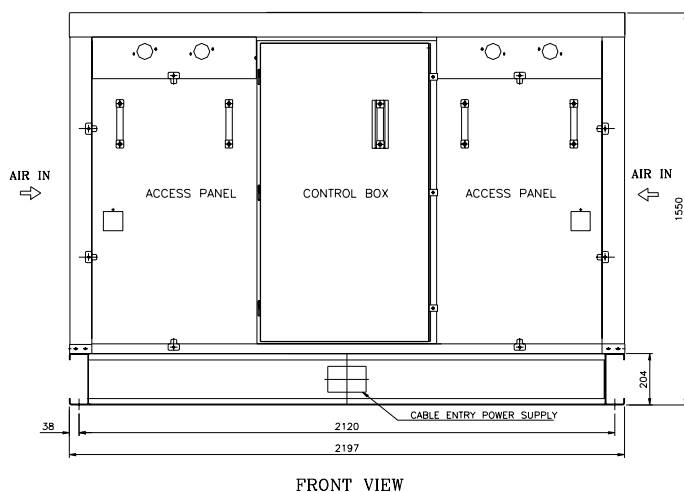
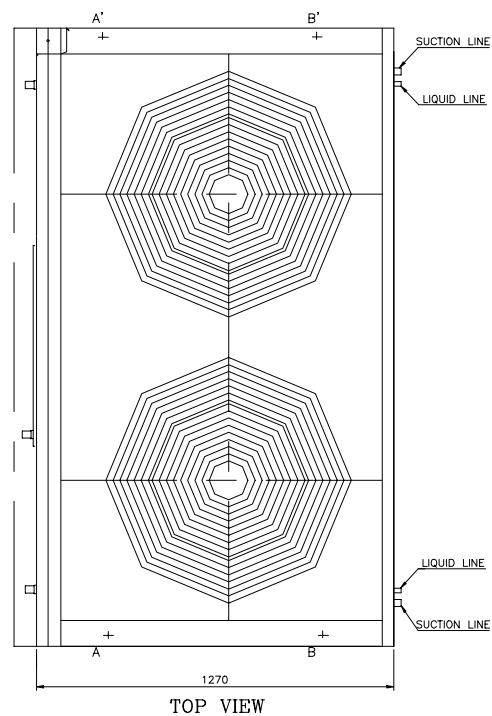


NOTES:

1. All dimension are in mm, unless otherwise specified.
2. Allow 32" (812 mm) clearance to service end of the unit, 48" (1219 mm) on remaining sides for proper airflow.

DIMENSIONS

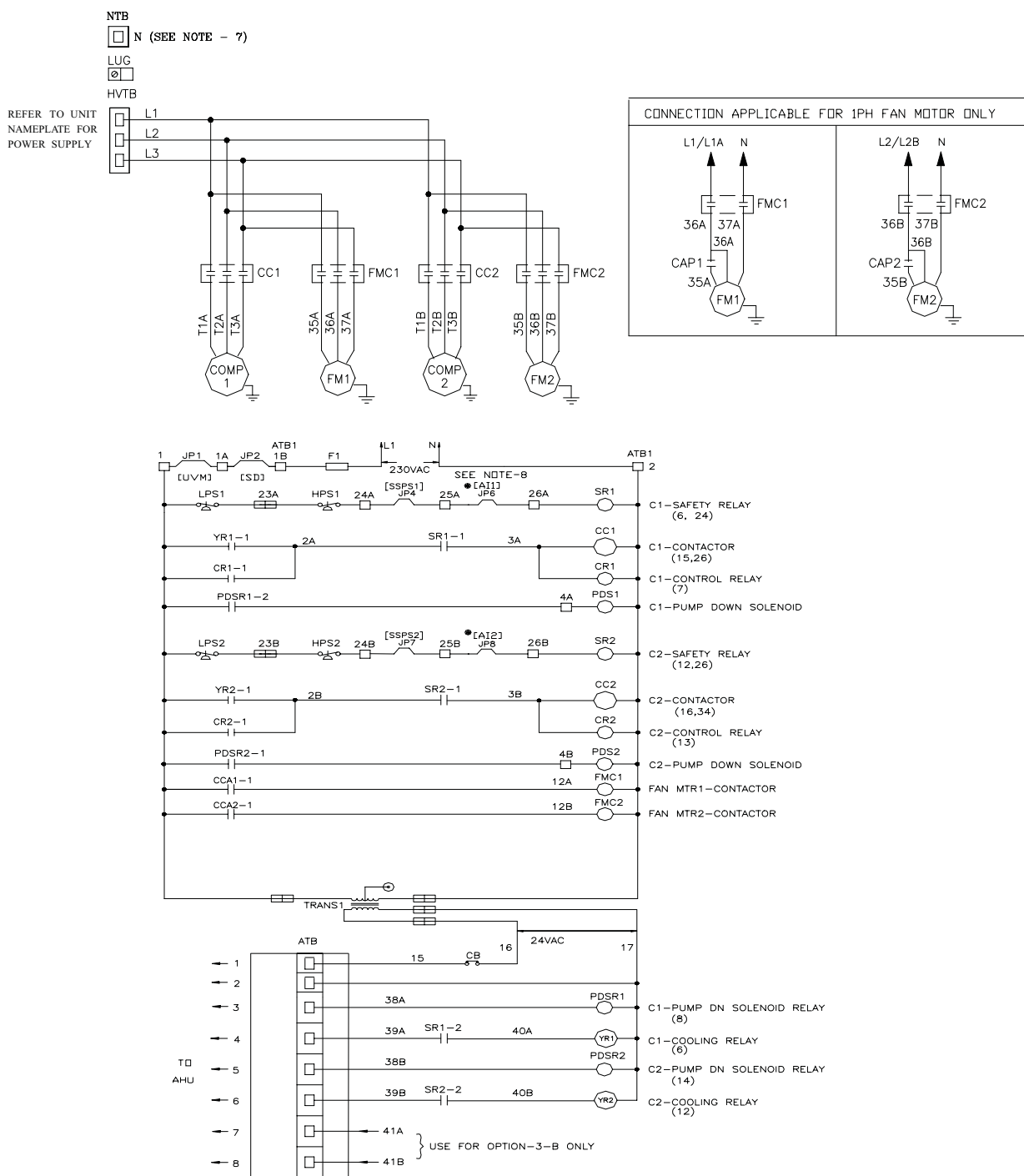
OCU 240 -OCU 300



NOTES:

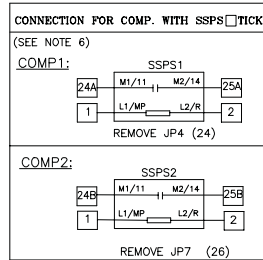
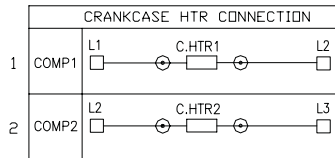
1. All dimension are in mm, unless otherwise specified.
2. Allow 48" (1219 mm) clearance on all sides for proper airflow.

TYPICAL SCHEMATIC WIRING DIAGRAM



NOTE: 1. Refer to next page for legend, notes & wiring diagram for optional items.
 2. Refer to unit control box (inside panel) for exact wiring diagram.

TYPICAL SCHEMATIC WIRING DIAGRAM

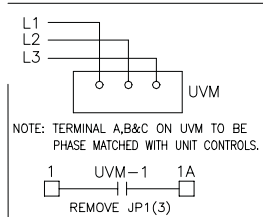


SET POINTS

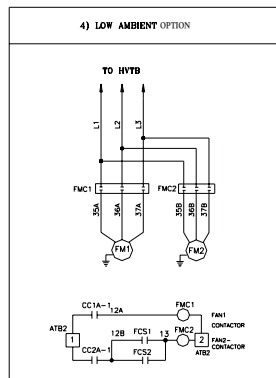
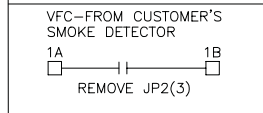
NAME	OPEN (PSIG)	CLOSE (PSIG)
LPS1&2	25 ± 5	50 ± 5
HPS1&2	450 ± 10	360 ± 15

OPTIONS

1) UVM OPTION

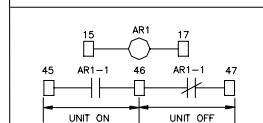


2) SMOKE DETECTOR OPTION

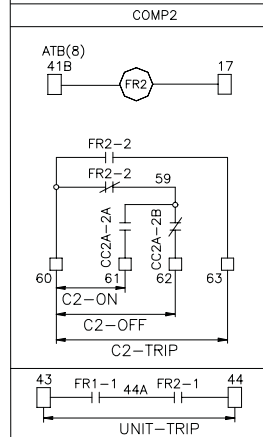
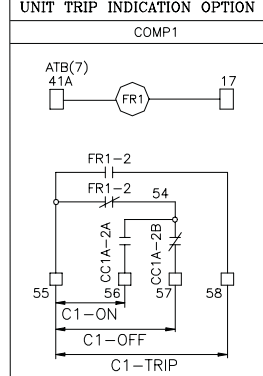


3) VOLT FREE CONTACT OPTIONS

A) UNIT ON & OFF INDICATION



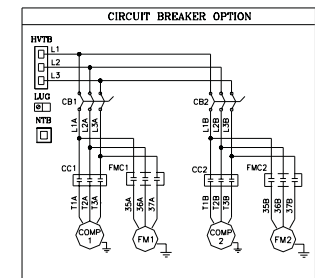
B) COMP ON, OFF & TRIP [&] UNIT TRIP INDICATION OPTION



LEGEND	
AHU	AIR HANDLING UNIT
AI	ANTI ICE THERMOSTAT
AR	AUXILIARY RELAY
ATB	AUXILIARY TERMINAL BLOCK
CAP	CAPACITOR
CC	COMPRESSOR CONTACTOR
CB	CIRCUIT BREAKER
C. HTR	CRANKCASE HEATER
COMP	COMPRESSOR
CR	CONTROL RELAY
FM	FAN MOTOR (CONDENSER)
FMC	FAN MOTOR CONTACTOR
FR	FAULT RELAY
HPS	HIGH PRESSURE SWITCH
HVTB	HIGH VOLTAGE TERMINAL BLOCK
JP	JUMPER
L1	LINE 1
L2	LINE 2
L3	LINE 3
LPS	LOW PRESSURE SWITCH
LUG	LUG GROUND
N	NEUTRAL
NTB	NEUTRAL TERMINAL BLOCK
PDS	PUMP DOWN SOLENOID
PDSR	PUMP DOWN SOLENOID RELAY
RR	RESET RELAY
SD	SMOKE DETECTOR
TRANS	TRANSFORMER
T'STAT	THERMOSTAT
UVM	UNDER VOLTAGE MONITOR
VFC	VOLT FREE CONTACT
YR	COOLING RELAY
---	FIELD WIRING
+	DISCONNECT TAB - 1/4"
⊙	SPLICE-CLOSED END

NOTES

- POWER SUPPLY, REFER TO UNIT NAMEPLATE.
- ANY WIRE REPLACEMENT SHOULD BE OF THE 90 OR ITS EQUIVALENT. USE COPPER CONDUCTOR WIRES ONLY.
- POWER MUST BE SUPPLIED TO CRANKCASE HEATER FOR MINIMUM OF 12 HOURS PRIOR TO SYSTEM START UP.
IF POWER IS OFF 6 HOURS OR MORE, CRANKCASE HEATER MUST BE ON FOR 12 HOURS BEFORE OPERATING THE SYSTEM.
FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN COMPRESSOR DAMAGE.
- FUSED DISCONNECT SWITCH OR CIRCUIT BREAKER TO BE PROVIDED BY END USER WITH RATING AS RECOMMENDED BY OMRAN TAHVIEH.
- IF PDS IS FACTORY INSTALLED, PLEASE READ BROKEN LINES AS CONTINUOUS LINES.
- ALLOW 2-3 MINUTES FOR SSPS SWITCH TO CLOSE, BEFORE STARTING THE UNIT.
- NEUTRAL LINE REQUIRED ON 380V-3Ph-60Hz & 380/415V-3Ph-50Hz POWER SUPPLY ONLY.



INSTALLATION & START-UP INSTRUCTIONS

SAFETY CONSIDERATIONS

Improper installation, service, maintenance or use can cause explosion, fire, electrical shock or other conditions which may cause personal injury or property damage. Check with your nearest Omran dealer/sales office for information or assistance.

Warning: Before installation or servicing the system, always turn off main power supply. Electrical shock can cause personal injury or death.

INSTALLATION

STEP-1:

Check equipment and job site

Unpack unit and move to final location taking care not to damage the unit. Remove screws holding the unit to wooden pallet and after removing wooden pallet, refix the screws.

STEP- 2:

Installation on a solid, level mounting pad

When installing, allow sufficient space for airflow clearance, wiring, refrigerant piping and service. Allow 48" (1219 mm) clearance all around and 60" (1524 mm) above unit for proper airflow. Double the service access when multiple units are installed at one location.

On rooftop applications, locate unit at least 6" (152 mm) above roof surface. Place unit above a load-bearing wall, isolate unit and piping set from structure. Use 4"x4"x1" thick rubber/cork mounting pads.

Arrange supporting members to adequately support unit and minimize transmission of vibration to building.

STEP-3:

Piping connections

Outdoor units should be connected to indoor units using field-supplied piping of refrigerant grade and correct size. The liquid and suction line diameters can be determined from the physical data table. For piping requirements beyond 50 ft (15.24 m), obtain information from your nearest Omran dealer/sales office.

If either refrigerant piping or indoor coil is exposed to atmospheric conditions, it must be dehydrated to 1000 microns to eliminate moisture contamination in the system.

It is advisable to size piping according to recommended ASHRAE methods. Install piping according to refrigeration standard practice. Run refrigerant pipes as directly as possible, avoiding unnecessary turns and bends. Install refrigerant pipes carefully to prevent damaging the suction pipe insulation and vibration transmission to the structure.

Outdoor unit connected to factory matched indoor unit

Outdoor unit contains correct system refrigerant charge for operation with matched indoor unit as given on cooling capacity table and when connected with up to 25 ft (7.62 m) of field-supplied piping. Check refrigerant charge for maximum efficiency.

Sweat connection

Use refrigerant grade piping. Service valves are closed from factory when shipped and ready for brazing. After wrapping the service valve with a wet cloth, the piping set can be brazed to service valve using either silver rod or silfos rod brazing material. When brazing completed, refrigerant piping and indoor coil are now ready for leak testing. This check should also include all field and factory brazed joints.

Warning: Relieve all pressure before refrigerant system repair or final unit disposal to avoid personal injury or death. Use service ports and open all valves.

ELECTRICAL

STEP 1: INSTALLATION

A) Please ensure power supply to the unit is as per unit nameplate (Volts/Ph/Hz) requirements.

Caution: Operation of the unit on improper power supply will result in damage to the unit.

Note: Use copper wires of proper rating for all field wiring.

Warning: Before servicing or installation of the unit, always TURN OFF all power to the unit. There may be more than one disconnect switch. Ensure all of them are turned off. Electrical shock can cause personal injury or death.

B) Ground & power wires

Connect power wires to terminal block per wiring diagram.

Connect ground wire to the ground lug inside the control box.

C) Control wiring between outdoor & indoor unit

Use 16 gauge color-coded wire between the indoor and outdoor units (control wiring).

STEP 2: START-UP

- 1) Energize crankcase heater for a minimum of 12 hours prior to the system start-up. To energize crankcase heater only, set thermostat to OFF position and close electrical disconnect switch to the outdoor unit.
- 2) Fully open liquid/suction service valves.
- 3) Close electrical disconnect switch to energize the system.
- 4) Set room thermostat to desired temperature.

SYSTEM DESIGN

THE OMRAN TAHVIEH CONDENSING UNIT SYSTEM HAS BEEN DESIGNED BASED ON THE FOLLOWING:

- Intended for outdoor installation with free air intake and discharge.
- Minimum outdoor operating air temperature during cooling without low ambient operation option is 55°F.
- Maximum outdoor operating air temperature during cooling is 120°F.

